

INFORMATION HANDOUT

For Contract No. 06-0Q4504

At 06-Ker-5-6.0/9.0

Identified by

Project ID 0613000117

MATERIALS INFORMATION

Summary of Foundation Recommendation Reports

M e m o r a n d u m

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To: MR. RANDY BOWLES
Design Engineer
District 06, Design IV Oversight

Date: January 14, 2014
File: 06-KER-05-6.0/9.0
06-0Q4504
0613000171
(Sign Relocation)

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5

Subject: Geotechnical Recommendations for Overhead Sign Foundation

We have received your request for a geotechnical recommendation for the above referenced project. It is proposed to relocate an existing overhead truss sign a distance of 10 feet, supported by a CIDH shaft.

The information in this report is based on review of the following resources:

- 1) The geologic map of the Grapevine quadrangle, U.S.G.S., Dibblee (1973) and Minch (2005),
- 2) aerial photographs of the site,
- 3) U.S.G.S. topographic maps of the site and
- 4) the new sign plans and layout sheets.

The project site is located north of Lebec, on the downhill side of Tejon Pass, northbound.

A search for subsurface information such as nearby as-built borings for existing facilities was conducted and none were sufficiently adjacent to the sign location to use reliably. These recommendations are based on observations of the surface exposures and topographic projections only. We feel that there is sufficient exposure of materials in the existing cut slopes and that an exploration program need not be conducted, however; verification of the subsurface conditions will be required during construction.

The site geotechnical conditions are interpreted to be as follows:

The existing sign foundation and the proposed new sign are located in alluvium and igneous rock. This alluvium is anticipated to be dense to very dense and contain coarse cobble to boulder sized clasts. Rock is exposed in a cut slope directly adjacent to the area of the new relocation and consists of highly fractured granodiorite. The depth to granodiorite rock is estimated to be 10-20 feet below O.G. Water is expected to be

sufficiently low enough not to be a factor during construction based on the distance to the nearest canyon drainage.

There is evidence of landsliding in the area, however, the new sign location is not in an area that appears to be impacted.

The site soil condition can be classified as non-cohesive.

The Standard Plan Reference sheets for foundations of Overhead signs indicate minimum soil parameters of $\phi = 30$ degrees and $\gamma = 120$ pcf are required in order to use the Standard design shown on plan S7, page 340 of the 2010 Standard Plans.

The geotechnical materials underlying the new sign location exceed these criteria.

Recommendations

The new overhead sign (post type VI) should be founded on a 5' diameter CIDH shaft with a foundation depth of 22 feet.

The site subsurface conditions are to be verified by this Office (OGDN Branch D) **during** drilling of the CIDH shaft.

Construction Considerations

Difficult drilling of the CIDH shaft should be anticipated in the form of hard rock and boulders. Rock augers and/or core barrels may be required to complete the drilled shaft.

The use of a temporary casing system may be needed near the surface to prevent caving of disturbed materials into the drilled hole.

 

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